

Peripatus ceramensis, n. sp.

By

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With Plate 19.

Female.—Antennæ dark grey, the articulations thinly ringed with ochreous. Eyes shiny black. Oral papillæ pale ochreous at the base, pale grey on tips, and dotted there with black. Head and anterior part of body to about the second pair of legs rather pale rust-colour, irrorated with black; there is in some specimens an ochreous marking on the dorsal median line of the head. Rest of body dark slaty-grey, irregularly spotted with small sub-circular rust-coloured spots, most of them centred with a black dot (the spots are the bases of papillæ, the black dots the bristles at the summits). These spots extend to near the head, but are there smaller and paler. There is a narrow median dorsal line of very dark grey, becoming narrower, paler, and almost obsolete near the head, but it continues fairly distinct to the anus. This line, under the microscope, is seen to be divided longitudinally by an exceedingly fine light line. Underside wholly grey, lighter than the upperside, and irregularly spotted with pale ochreous, chiefly on each side of the median line. Round the mouth is pale ochreous. Legs on the inside concolourous with the underside; on the outside concolourous with the upperside, and with a few pale rusty spots, chiefly near the base. Just around the anus the skin and papillæ are ochreous or rusty. The spiniferous pads on the legs are pale ochreous. Between each pair of legs, on

the median ventral line, is a rather large light ochreous spot. Papillæ round genital opening whitish.

The newly-born young are uniformly pale dove-grey, and take four or five days to become dark, and several days longer before the spots appear; at first being pale ochreous, and not becoming rust-colour till much later in life.

Out of sixty-three specimens examined one had twenty-two pair of legs, the remainder only twenty-one; they decrease in size towards the ends, especially posteriorly, where the last pair are very small (fig. 3). Three spiniferous pads on each leg, except the last pair, where they are missing or only rudimentary; the basal pads of the fourth and fifth pairs of legs divided into three parts; the opening of the modified nephridia situated on the central portion. Foot with three primary papillæ, one dorsal and two lateral, one on each side (fig. 2); on the last pair the dorsal papillæ are nearer to the anterior lateral ones.

When proceeding over plane surfaces the animal walks on the spiniferous pads, the feet being turned back on the dorsal side of the leg, and only brought into play when it is necessary to use the claws as hooks. The last pair of legs is not used for walking, and very often the penultimate pair do not come into play.

Inner jaw-claw with six accessory teeth, outer jaw-claw with none. "Tongue" with six small teeth, the anterior two side by side, the four behind in a longitudinal row.

Vagina, or genital opening, subterminal, behind the last pair of legs, and near to the anus (fig. 3).

The female genital organs consist of two long tubes, which meet together posteriorly to form the very short duct leading to the vagina, and anteriorly where they form the ovaries (fig. 4).

The ovaries consist of a bilobate chamber about 1 mm. long, with morula-like walls filled with nucleated cells of various sizes which causes it to vary slightly in size and shape. It is attached to the median line of the septum, between the seventeenth and eighteenth pair of legs, by a

thin membrane (fig. 5, *m.*); a pair of fine tracheæ run along the edges of this membrane and enter the ovaries. A single short median duct leads from the ovarian chamber and immediately divides into two oviducts (fig. 5, *ovd.*). At the end of each oviduct is a small globular receptaculum seminis opening into the oviduct by two short ducts (fig. 5, *r.s.* and *d.*); beyond these the tubes increase in size to form the large uteri (fig. 4, *ut.*).

In very young specimens these organs are coiled up in the central body cavity behind the seventeenth or eighteenth pair of legs, the ovaries are attached by a short membrane to the septum, and the tubes are of equal diameter throughout. As they develop the membrane lengthens, and the ovaries and receptacula seminis are carried forward to about the fourteenth or fifteenth pair of legs, the uteri continue on till about the tenth or eleventh and then bend back and proceed to the subterminal vagina, increasing in size from the receptaculum seminis backwards.

The eggs are very minute, about .05 mm. in diameter; after passing the receptaculum seminis they begin to swell and divide, and embryos in various stages of development are found in the uteri, the one nearest the vagina in one uterus being slightly more developed than the corresponding one in the other uterus. The young are born one at a time, apparently alternately from each uterus, at intervals of about a couple of weeks; most likely births take place the whole year round. The largest specimen we took was about 55 mm.; the young when born are about 13 or 14 mm.

The sixty-three specimens examined were all females, so the male remains still to be discovered. That the male of such a lethargic animal should be so rare is very strange. Many of the small individuals had embryos in their uteri showing that they had been fertilised; three half-grown specimens had their genital organs still small and packed away behind the seventeenth pair of legs and evidently had not been fertilised; in these three specimens the slime ducts were enormously distended.

All these specimens were taken in the vicinity of Përoe (Western Ceram) living in old logs and stumps of trees in a certain stage of decay; in one case just under the bark, but in all the others some distance below the surface, working their way in along cracks and runs made by insects. In captivity their favourite food is the pupæ of wood-boring beetles, which they bite open and suck out the contents.

This species, the first taken in the Moluccas, appears by the female characters to differ from all others and to form a distinct group. In the size of the eggs and its mode of development and birth it approaches the neotropical group but is quite distinct in all other characters, such as number of legs, position of vagina, shape of papillæ and number of pads on the legs. In these latter characters it comes nearer to the South African and Australian species, but the bilobate ovarian chamber with the single duct leading from it places it quite apart. It will be of interest to see if Papuan species, when found, will agree with it.

PËROE, WEST CERAM;
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EXPLANATION OF PLATE 19,

Illustrating Messrs. F. Muir's and J. C. Kershaw's paper on
"Peripatus Ceramensis, n. sp."

FIG. 1.—Adult female, enlarged about $2\frac{1}{2}$ times.

FIG. 2.—Dorsal view of foot. *p*. Primary papilla.

FIG. 3.—Ventral view of last three pair of legs. *v*. Vagina or genital opening. *a*. Anus.

FIG. 4.—Female genital organs, slightly enlarged. *m*. Membrane. *ov*. Ovaries. *rs*. Receptaculum seminis. *ut*. Uterus. *v*. Vagina.

FIG. 5.—Much enlarged view of anterior end of fig. 4, with same lettering, except—*tr*. Trachea. *ovd*. Oviduct. *d*. Ducts of receptaculum seminis.